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LOG OF MEETING
DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Canadian Standards Association (CSA) Meeting of the Technical Committee on Cycling Helmets

DATE OF MEETING: October 13, 1995 **PLACE:** CSA Offices
Etobicoke (Toronto)
Ontario, Canada

LOG ENTRY SOURCE: Scott Heh, ESME SH

DATE OF ENTRY: October 23, 1995

COMMISSION ATTENDEES: Scott Heh, ESME

NON-COMMISSION ATTENDEES: Representatives of helmet manufacturers, testing laboratories, CSA, Product Safety Branch of Health Canada, consumers, and biomedical experts. Specific attendees will be available upon receipt of meeting minutes.

SUMMARY OF MEETING

The main focus of the meeting was to discuss proposed amendments to the CSA bicycle helmet voluntary standard (CAN/CSA-D113.2-M89) for bicycle helmets intended for children under the age of five years.

After introductions and approval of the last meeting minutes, the committee discussed re-affirmation of the current CSA bike helmet standard D113.2-M89. The group agreed to send a letter ballot to the CSA technical committee to renew/reaffirm the standard. This ballot will include minor but necessary technical clarifications to the standard but will not include proposed new requirements for young children's helmets.

The next agenda item was to discuss proposed amendments to the D113.2 standard to include special provisions for helmets for children under 5 years of age. The proposed new requirements differ from the CSA requirements for older children and adult helmets in three main areas:

(1) an extended test area is specified (increasing the helmet coverage of the head)

(2) the mass of the test headform is reduced from about 5 kg for older children and adult helmets to 3.1 kg for the smallest headform and 4.1 kg for the next smallest headform.

(3) the peak-g acceleration criteria is more stringent: the maximum flat anvil impact is reduced from 250-g to 200-g and the maximum cylindrical anvil impact is reduced from 200-g to 150-g.

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The peak-g criteria generated the most discussion. Proponents of lowering the peak-g expressed that given what we know about the characteristics of a young child's skull, a reduced value for allowable peak-g is needed to assure that it is more likely for the helmet to crush and absorb impact rather than the child's skull.

The committee reviewed handouts of test data provided by a manufacturer's in-house lab and by an independent helmet test laboratory. The data showed the effects of variations in foam density on impact attenuation results using a reduced mass test headform. This preliminary data suggested to the group that it is possible to manufacture a helmet to meet the CSA proposed amendments for helmets for children under age five. It was agreed by those familiar with helmet testing that major changes would need to be made to much existing helmet test equipment in order to meet a total drop mass of 3.1 kg that is proposed for the ISO A headform.

Some members of the committee expressed reservations about a drastic change in the peak-g criteria. Some expressed concern that some protective capability may be compromised at high speed impacts. Others were concerned that the "softer" helmet that would be needed to meet the proposed criteria would not have the same structural integrity after one hit compared to helmets meeting the current criteria.

An informal vote was called of voting members of the CSA technical committee who were in attendance. The group voted to send an official letter ballot to all members of the committee on the proposed changes in drop mass, test area, and peak-g criteria for helmets for children under age five. The count was 8 yes, 2 no, and 1 abstain. The children's provisions letter ballot will be sent out after completing the ballot to reaffirm the existing D113.2 standard that does not include special children's provisions.

The committee chairman distributed copies of the draft Federal Register notice that was in the 9/14/95 Commission briefing package on the proposed bicycle helmet regulation. He asked me to brief the committee on the status of the CPSC rulemaking. I said that the Commission will soon vote on the approval of a revised proposed bicycle helmet regulation. I stated that for many of the same reasons considered by the CSA committee, the CPSC proposed standard also has special provisions for helmets intended for children under 5 years old. These include an extended test area, a lower headform mass of 3.9 kg, and a lower peak-g criteria of 250-g compared to a 300-g criteria for older children and adult helmets. It is difficult to make a comparison on the relative rigors between the CPSC and CSA standards since the CPSC tests at a somewhat higher impact velocity on the flat anvil (6.2 m/s for CPSC vs. 5.7 m/s for CSA)

and the CPSC specifies impacts on hemispherical and curbstone anvils instead of the cylindrical anvil impact required by the CSA standard.

I said that the Commission staff feel that the proposed CPSC requirements are an important step forward in providing more appropriate head protection for young children than exists in current U.S. voluntary standards. I stated that since both the CPSC and the CSA committee are focussed especially on the scope of children under age 5, there is an opportunity to harmonize standards in the U.S. and Canada before they are finalized. I encouraged the CSA committee to review the CPSC proposed rule and staff rationale and consider the possibility of harmonizing with the U.S. I stated that if CSA committee members feel strongly that the requirements that they are developing are more appropriate and should be considered by the Commission, then they should submit formal comments to the proposed rule with technical support to justify their position.

Other business items were discussed briefly before the meeting was adjourned. The committee discussed how to test bike helmets with "molded-in" visors in accordance with the CSA standard. The date of the next technical committee meeting was set for the first or second week of February 1996.

cc: Colin Church, EXHR
Greg Rodgers, ECSS
Suad Nakamura, EHHS
Celestine Trainor, ESHF
George Sushinsky, LSEL
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